Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Cell Growth & Division Exam**

**This exam contains multiple choice, true/false, and short answer questions. Good Luck!**

*Circle your answer to the multiple choice questions below (3 points each).*

1. The rate at which food and oxygen are used up and waste products are produced depends upon:

a. mitochondria

b. the cell’s volume

c. mitosis

d. the cell’s surface area

2. Chromosomes are made up of:

a. ribosomes

b. water

c. DNA

d. spindle fibers

3. How many chromosomes does a typical human cell contain?

a. 46

b. 20

c. 65

d. 100

4. Which stage of mitosis do the spindle fibers begin to form?

a. Telophase

b. Metaphase

c. Prophase

d. Anaphase

5. Which phases make up Interphase of mitosis?

a. G1, S Phase, and G2

b. G1, Prophase, and G2

c. S Phase, G2, and Telophase

d. G2, Prophase, and Telophase

6. In which stage of Mitosis does the cell physically split into two daughter cells?

a. Anaphase

b. G1 Phase

c. Telophase

d. Cytokinesis

7. Timing of the cell cycle in eukaryotic cells is controlled by a group of proteins called:

a. nuclei

b. cyclins

c. cells

d. centrioles

8. External regulators in the cell cycle direct cells to:

a. stop the cell cycle

b. have no effect on cells

c. grow uncontrollably

d. direct cells to speed up or slow down in the cell cycle

9. Internal regulators in the cell:

a. let water and nutrients into the cell

b. allow cell cycle to proceed only when certain processes have occurred inside the cell

c. cause the cell cycle to stop

d. grow uncontrollably

10. When a mutation occurs on a p53 gene the:

a. cell cycle stops

b. new eukaryotic cells are created

c. cells lost the ability to respond to signals that control cell growth

d. cell organelles lose their function

*Circle either True or False to the following questions (3 points each).*

1. True/False: Reproduction by mitosis is considered asexual.

2. True/False: Centromeres are always located in the center of a chromosome.

3. True/False: Stem cells are only found in embryos.

4. True/False: The nuclear envelope begins to re-form during Metaphase.

5. True/False: Embryonic stem cell research is a highly controversial topic in society.

6. True/False: Cytokinesis works the same in both plant and animal cells.

7. True/False: During Anaphase, centromeres join to the spindle fibers in the cell

8. True/False: Chromosomes are normally visible in a cell.

9. True/False: Tumors are masses of cancer cells.

10. True/False: All tumors are cancerous.

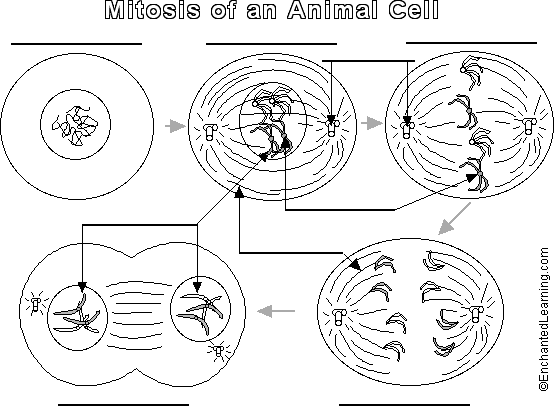
*Complete the short answer questions below (4 points each).*

1. What is Cell Division and why is it important?

2. Name four main causes of many different forms of cancer.

3. Name four different types of cells in the body that stem cells can turn into.

1. Label each stage of mitosis on the pictures below.Then, describe what occurs during each stage *(15 points: 5 points for labeling the diagram & 2 points per stage description).*

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